

What is claimed is:

1. A test support program executed by a computer for performing an operational test of a program under development by using test patterns each of which  
5 includes a parameter to be inputted to a function defined in the program under development and a return value to be outputted from the function, said test support program makes said computer perform processing comprising the steps of:

10 (a) acquiring a post-update operation description which defines details of an operation of a function included in said program under development after an update when said program under development undergoes the update;

15 (b) selecting a pre-update operation description which has high commonality with said post-update operation description acquired in step (a), from among a plurality of pre-update operation descriptions defining details of operations of functions included in  
20 said program under development before the update;

(c) extracting a pre-update test pattern for an operational test of said pre-update operation description selected in step (b), from among a plurality of pre-update test patterns prepared for operational  
25 tests of the program under development before the update; and

(d) generating a post-update test pattern

for an operational test of said post-update operation description acquired in step (a), by inheriting at least a portion of said pre-update test pattern extracted in step (c).

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2. The test support program according to claim 1, wherein one of said plurality of pre-update operation descriptions which is identical to said post-update operation description acquired in step (a) in at least one of a plurality of predesignated attribute information items is selected in step (b) as said pre-update operation description.

3. The test support program according to claim 2, wherein priorities are assigned to said plurality of predesignated attribute information items, and one of said plurality of pre-update operation descriptions which is identical to said post-update operation description acquired in step (a) in a portion of the plurality of predesignated attribute information items having high priority is preferentially selected in step (b) as said pre-update operation description.

4. The test support program according to claim 2, wherein said plurality of predesignated attribute information items include a function name specifying a function, a type of a parameter to be inputted to the

function, a type of a return value to be outputted from the function after the function is executed.

5        5. The test support program according to claim 1,  
wherein information to be inherited in step (d) from  
said pre-update test pattern extracted in step (c) is  
determined according to at least one attribute  
information item which is common to said post-update  
operation description acquired in step (a) and said pre-  
10 update operation description selected in step (b).

6. The test support program according to claim 5,  
wherein said plurality of predesignated attribute  
information items include a function name specifying a  
15 function, a type of a parameter to be inputted to the  
function, a type of a return value to be outputted from  
the function after the function is executed, and data  
corresponding to the at least one attribute information  
item common to said post-update operation description  
20 acquired in step (a) and said pre-update operation  
description selected in step (b), other than the  
function name, is inherited from said pre-update test  
pattern extracted in step (c).

25        7. The test support program according to claim 1,  
wherein said processing further comprises a step of  
automatically generating information as at least a

portion of said post-update test pattern which does not inherit from said pre-update test pattern extracted in step (c).

5           8. The test support program according to claim 7, wherein said processing further comprises a step of displaying details of said post-update test pattern, and highlighting said information which is automatically generated.

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          9. The test support program according to claim 1, wherein said processing further comprises a step of selecting one of said plurality of pre-update operation descriptions based on designation by a manipulation  
15 input, when none of the plurality of pre-update operation descriptions has high commonality with said post-update operation description acquired in step (a).

          10. The test support program according to claim 9,  
20 wherein said processing further comprises a step of displaying a list of at least one of said plurality of pre-update operation descriptions which has not been selected, and a step of selecting one of the at least one of said plurality of pre-update operation  
25 descriptions which is designated by a manipulation input.

          11. A test support program executed by a computer

for performing an operational test of an object-oriented program under development by using test patterns each of which includes a parameter to be inputted to a function defined in the object-oriented program and a return value to be outputted from the function, said test support program makes said computer perform processing comprising the steps of:

5 value to be outputted from the function, said test support program makes said computer perform processing comprising the steps of:

(a) acquiring a post-update method information item which defines details of an operation of a function included in said object-oriented program after an update, when said object-oriented program undergoes the update;

10 of a function included in said object-oriented program after an update, when said object-oriented program undergoes the update;

(b) selecting a pre-update method information item which has high commonality with said post-update method information item acquired in step (a), from among a plurality of pre-update method information items defining details of operations of functions included in said object-oriented program before the update;

15 post-update method information item acquired in step (a), from among a plurality of pre-update method information items defining details of operations of functions included in said object-oriented program before the update;

(c) extracting a pre-update test pattern for an operational test of said pre-update method information item selected in step (b), from among a plurality of pre-update test patterns prepared for operational tests of the object-oriented program before the update; and

20 an operational test of said pre-update method information item selected in step (b), from among a plurality of pre-update test patterns prepared for operational tests of the object-oriented program before the update; and

25 the update; and

(d) generating a post-update test pattern for an operational test of said post-update method

information item acquired in step (a), by inheriting at least a portion of said pre-update test pattern extracted in step (c).

5           12. A test support process for performing an operational test of a program under development by using test patterns each of which includes a parameter to be inputted to a function defined in the program and a return value to be outputted from the function, said  
10 test support process comprising the steps of:

(a) acquiring a post-update operation description which defines details of an operation of a function included in said program after an update, when said program undergoes the update;

15           (b) selecting a pre-update operation description which has high commonality with said post-update operation description acquired in step (a), from among a plurality of pre-update operation descriptions defining details of operations of functions included in  
20 said program before the update;

(c) extracting a pre-update test pattern for an operational test of said pre-update operation description selected in step (b), from among a plurality of pre-update test patterns prepared for operational  
25 tests of the program before the update; and

(d) generating a post-update test pattern for an operational test of said post-update operation

description acquired in step (a), by inheriting at least a portion of said pre-update test pattern extracted in step (c).

5           13. A test support apparatus for performing an operational test of a program under development by using test patterns each of which includes a parameter to be inputted to a function defined in the program and a return value to be outputted from the function, said  
10 test support apparatus comprising:

                  a           post-update           operation-description acquisition unit which acquires a post-update operation description which defines details of an operation of a function included in said program after an update, when  
15 said program undergoes the update;

                  a           pre-update operation-description storage unit which stores a plurality of pre-update operation descriptions defining details of operations of functions included in said program before the update;

20                   a pre-update operation-description selection unit which selects a pre-update operation description which has high commonality with said post-update operation description acquired by said post-update operation-description acquisition unit, from among said  
25 plurality of pre-update operation descriptions stored in said pre-update operation-description storage unit;

                  a pre-update test-pattern storage unit which

stores a plurality of pre-update test patterns prepared for operational tests of the program before the update;

5           a pre-update test-pattern extraction unit which extracts a pre-update test pattern for an operational test of said pre-update operation description selected by said pre-update operation-description selection unit, from among said plurality of pre-update test patterns stored in said pre-update test-pattern storage unit; and

10           a post-update test-pattern generation unit which generates a post-update test pattern for an operational test of said post-update operation description acquired by said post-update operation-description acquisition unit, by inheriting at least a  
15           portion of said pre-update test pattern extracted by said pre-update test-pattern extraction unit.

14.   A computer-readable recording medium which stores a test support program executed by a computer for  
20   performing an operational test of a program under development by using test patterns each of which includes a parameter to be inputted to a function defined in the program under development and a return value to be outputted from the function, said test  
25   support program makes said computer perform processing comprising the steps of:

         (a)   acquiring a post-update operation



description which defines details of an operation of a function included in said program under development after an update, when said program under development undergoes the update;

5                   (b) selecting a pre-update operation description which has high commonality with said post-update operation description acquired in step (a), from among a plurality of pre-update operation descriptions defining details of operations of functions included in  
10   said program under development before the update;

                  (c) extracting a pre-update test pattern for an operational test of said pre-update operation description selected in step (b), from among a plurality of pre-update test patterns prepared for operational  
15   tests of the program under development before the update; and

                  (d) generating a post-update test pattern for an operational test of said post-update operation description acquired in step (a), by inheriting at least  
20   a portion of said pre-update test pattern extracted in step (c).